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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,478	03/17/2004	Yih-Kuen Tsay	USP2364T-TP010-NTU	5502
30265	7590	10/04/2006	EXAMINER	
RAYMOND Y. CHAN 108 N. YNEZ AVE., SUITE 128 MONTEREY PARK, CA 91754			RAYYAN, SUSAN F	
			ART UNIT	PAPER NUMBER
			2167	

DATE MAILED: 10/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/803,478	Applicant(s) TSAY ET AL.	
	Examiner Susan F. Rayyan	Art Unit 2167	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3/17/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-20 are pending.

Claim Objections

2. Claims 1-8 are objected to because of the following informalities: **Each claim begins with a capital letter and ends with a period. Periods may not be used elsewhere in the claims except for abbreviations.** Appropriate correction is required.

MPEP 608.01(m) [R-3] Form of Claims

The claim or claims must commence on a separate physical sheet or electronic page and should appear after the detailed description of the invention. Any sheet including a claim or portion of a claim may not contain any other parts of the application or other material. While there is no set statutory form for claims, the present Office practice is to insist that each claim must be the object of a sentence starting with "I (or we) claim," "The invention claimed is" (or the equivalent). If, at the time of allowance, the quoted terminology is not present, it is inserted by the Office of Patent Publication. **Each claim begins with a capital letter and ends with a period. Periods may not be used elsewhere in the claims except for abbreviations.** See *Fressola v. Manbeck*, 36 USPQ2d 1211 (D.D.C. 1995). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation, 37 CFR 1.75(i). There may be plural indentations to further segregate subcombinations or related steps.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 3-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Number 6,704,728 issued to Jane Wen Chang et al ("Chang") and US Patent Publication 2004/0039734 issued to Douglas Russell Judd et al ("Judd").

As per independent claim 1 Chang teaches:

A sequence based indexing and retrieval method for text documents (Abstract), comprising the steps of:

- (a) generating a query token sequence, having at least a query token, from a query submitted by a user (column 2, lines 56-67);
- (b) generating at least a representative token sequence, having at least a document token, from each of said text documents that contain at least one token of said query token sequence (column 9, lines 49-60);

Chang does not explicitly teach measuring a similarity between each of said representative token sequences and said query token sequence by: (c.1) determining a token appearance score by measuring a token appearance of said representative token sequence with respect to said query token sequence; (c.2) determining a token order

score by measuring a token order of said representative token sequence with respect to said query token sequence; and (c.3) determining a token consecutiveness score by measuring a token consecutiveness of said representative token sequence with respect to said query token sequence; and (d) retrieving said text documents in responsive to said similarity of said representative token sequence with respect to said query token sequence with a ranking order in accordance with said token appearance score, said token order score, and said token consecutiveness score, provided that for a document with two representative token sequences, its similarity is determined by the representative token sequence with a higher score.

Judd does teach these measuring a similarity between each of said representative token sequences and said query token sequence by:

(c.1) determining a token appearance score by measuring a token appearance of said representative token sequence with respect to said query token sequence (paragraphs 56,58,68, as matching search terms);

(c.2) determining a token order score by measuring a token order of said representative token sequence with respect to said query token sequence (paragraph 26, lines 7-9 and paragraph 67 and desired search terms in same order are generally ranked higher);

(c.3) determining a token consecutiveness score by measuring a token consecutiveness of said representative token sequence with respect to said query token sequence (paragraph 57 and paragraph 64, as distance between matching search terms);

(d) retrieving said text documents in responsive to said similarity of said representative token sequence with respect to said query token sequence with a ranking order in accordance with said token appearance score, said token order score, and said token consecutiveness score, provided that for a document with two representative token sequences, its similarity is determined by the representative token sequence with a higher score (paragraph 10) to help users locate a desired document. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Chang with determining a token order score, determining a token appearance score, determining a token consecutiveness score to help users locate a desired document at paragraph 8.

As per claim 3, same as claim arguments above and Judd teaches:

wherein said weight of said query token in said query token sequence is measured by determining a token frequency of said query token in said text documents (paragraph 70).

As per claim 4,5, same as claim arguments above and Judd teaches:

determining a length of the longest common subsequence of said representative token sequence and said query token sequence, determining a length of said representative token sequence, determining a length of said query token sequence, and outputting said token order score of said token order by calculating a fraction of said length of said

Art Unit: 2167

longest common subsequence divided by an average sum of said length of said representative token sequence and said length of said query token sequence (paragraph 70).

As per claim 6,7,8 same as claim arguments above and Judd teaches:

determining a relative distance between a positional differentiation of each adjacent document tokens and a positional differentiation of said adjacent document tokens in said query token sequence, and (c.3.2) outputting said token consecutiveness score of said token consecutiveness by calculating a fraction of a sum of the inverses of said relative distances divided by the number of pairs of adjacent tokens, which equals the length of said representative token sequence less one(paragraph 56-paragraph 64).

As per claim 9, same as claim arguments above and Judd teaches:

wherein said similarity of said representative token sequence is calculated with respect to said query token sequence by summing said token appearance score, said token order score, and said token consecutiveness score, wherein said ranking order of said text documents is determined by a weighted sum of said token appearance score, said token order score, and said token consecutiveness score of each of said representative token sequences of said text documents(paragraphs 56,58,68, as matching search terms, paragraph 26, lines 7-9, paragraph 67as desired search terms in same order are generally ranked higher, paragraph 57 and paragraph 64, as distance between matching search terms).

As per claim 10, 11 same as claim arguments above and Judd teaches:

further comprising a step of selecting at least a candidate document from said text documents, wherein one of said text documents is selected to be said candidate document when said text document contains at least one token of said query token sequence (paragraph 55).

As per claim 12, 13 same as claim arguments above and Judd teaches:

further comprising a step of consulting an index of said text documents to establish said candidate document, wherein tokens that also appear in the query token sequence are collected to form a document token sequence for each document and the two longest segments of said document token sequence are selected as representative token sequences wherein the positional differentiation of each adjacent document tokens is no larger than a predetermined positioning value while said corresponding text document is selected as the said candidate document (paragraph 50, indexed documents and paragraph 57, search term proximity).

As per claim 14, 15, 16 same as claim arguments above and Judd teaches:

further comprising a step of retaining said candidate document to be used for measuring said similarity with respect to said query token sequence, wherein the said candidate document is retained when said candidate document contains a token that has a weight no less than a predetermined fraction of the total weight of query tokens (paragraph 55).

Claims 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Number 6,704,728 issued to Jane Wen Chang et al ("Chang") and US Patent Publication 2004/0039734 issued to Douglas Russell Judd et al ("Judd") in view of US Patent Publication 2003/0028520 issued to Shamim A. Alpha et al ("Alpha").

As per claim 2, same as claim arguments above and Chang and Judd teach , calculating a sum of the weights of the query tokens that appear in said representative token sequence and outputting said token appearance score of said token appearance by calculating a fraction of said sum divided by the total weight of all query tokens (paragraph 10). Chang and Judd do not explicitly teach consulting an index of said text documents to determine the weight of each token in said query token sequence. Alpha does teach this limitation to improve query response time and improve search results. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Chang and Judd with consulting an index of said text documents to determine the weight of each token in said query token sequence to improve query response time and improve search results (Abstract).

Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Number 6,704,728 issued to Jane Wen Chang et al ("Chang") and US Patent Publication 2004/0039734 issued to Douglas Russell Judd et al ("Judd") in view of Phillip Andre Bertolus et al ("Bertolus").

As per claim 17,18,19,20 same as claim arguments above and Chang and Judd do not explicitly teach wherein said text document contains Chinese characters, English words, numbers, punctuations, and symbols as said document tokens. Bertolus does teach this limitation at paragraph 38 to retrieve and index information on a network. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Chang and Judd with text document contains Chinese characters, English words, numbers, punctuations, and symbols as said document tokens to retrieve and index information on a network (paragraph 3).

Contact Information


4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan Rayyan whose telephone number is (571) 272-1675. The examiner can normally be reached M-F: 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cottingham can be reached on (571) 272-7079. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Susan Rayyan

September 28, 2006


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